

Application Serial No. 10/776,864
Reply to office action of October 26, 2005

PATENT
Docket: CU-3568

Amendments To The Claims

The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. (Original) A method of fabricating a substrate having a via terminal from a source substrate by piercing a conductive part through a core substrate of the substrate, the method comprising the steps of:

forming a concave part on a front surface of a source substrate thicker than the core substrate;

forming a front surface side conductive part by filling the concave part in the front surface with a conductor;

forming the core substrate by grinding the source substrate from a rear surface of the source substrate up to a position immediately before the front surface side conductive part is exposed such that a tip of the front surface side conductive part is covered with a portion of the core substrate;

exposing the tip of the front surface side conductive part by forming a concave part in a rear surface of the core substrate;

forming a rear surface side conductive part by filling the concave part in the rear surface with a conductor; and

electrically and mechanically connecting the front surface side conductive part with the rear surface side conductive part to form the via terminal.

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2. (Original) The method as claimed in claim 1, further comprising the step of forming an insulation film on a surface of the source substrate including an inner surface of the concave part on the front surface of the source substrate after the step of forming the concave part in the front surface of the source substrate thicker than the core substrate before the step of forming the front surface side conductive part by filling the concave part on the front surface with the conductor.

3. (Original) The method as claimed in claim 1, wherein the source substrate is one of a silicon substrate, a glass substrate and a ceramic substrate.

4. (Cancelled).

5. (Original) A method of fabricating a semiconductor device substrate for mounting a semiconductor element wherein the semiconductor device substrate includes at least one external connection terminal and a capacitor element, the at least one external connection terminal is provided on a rear surface of the semiconductor device substrate, and the capacitor element includes a core substrate and a capacitor part formed on a front surface of the core substrate by sandwiching an electrode between dielectric layers, the method comprising the steps of:

forming a capacitor element in such a way that a front surface side concave part in a front surface of the core substrate is filled with a conductor and the core substrate is grinded from a rear surface thereof up to a position where the front surface side conductive part is not exposed;

turning over the formed capacitor element and mounting the resulting capacitor element on the semiconductor device substrate;

forming an insulation layer on a front surface of the mounted capacitor

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element;

forming a concave part to pierce through the insulation layer toward the front surface side concave part by grinding the core substrate from the rear surface thereof;

forming a rear surface side conductive part by filling the formed concave part in the rear surface of the core substrate with a conductor and electrically and mechanically connecting the rear surface side conductive part with the front surface side conductive part at a thickness directional position of the core substrate in order to form a via terminal; and

forming an insulation layer on an upper surface of the resulting core substrate, forming a hole to pierce the insulation layer, filling the hole with a conductor, and forming a conductive path electrically and mechanically connected to the via terminal.

6. (Original) The method as claimed in claim 5, wherein the step of forming the capacitor element forms an insulation film on an inner surface of the front surface side concave part and fills the front surface side concave part with a conductor.

7. (Original) The method as claimed in claim 5, wherein the core substrate is one of a silicon substrate, a glass substrate and a ceramic substrate.